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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/023,167	12/18/2001	Johannes Catharina Antonius Op De Beek	NL000756	5113

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PHILIPS INTELLECTUAL PROPERTY & STANDARDS
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BRIARCLIFF MANOR, NY 10510

EXAMINER

STREGE, JOHN B

ART UNIT	PAPER NUMBER
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2625

DATE MAILED: 12/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/023,167 ✓

Applicant(s)

OP DE BEEK ET AL.

Examiner

John B. Strege

Art Unit

2625

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 November 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 8 and 11 is/are allowed.
- 6) ☒ Claim(s) 1-7,9 and 10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 11/16/05 has been entered.

Response to Amendment

The amendment received 10/19/05 has been entered in full.

Response to Arguments

Applicant's arguments with respect to claims 1 and 9 have been considered but are moot in view of the new ground(s) of rejection.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claim 1-6 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cline et al. European Patent Application 0549182A2 (as cited in the IDS, hereinafter "Cline") in view of Kimura USPN 4,835,688..

Cline discloses a method for visualizing a limited part of a 3D medical image-point-related data set, said method being based on selectively suppressing a geometrically selected part of the data set and rendering an image based on any non-suppressed part of the data set (col. 2 lines 41-45 disclose a graphic workstation to remove a predetermined volume from a model of an object and col. 4 lines 8-14 recite that the model may be volume data obtained from a system for providing three-dimensional imaging such as tomography, and col. 2 lines 32-34 recite that the invention may be used for surgery procedures), said method being characterized in that said selected part comprises a first selection containing all points associated to a nearer region with respect to a first clipping plane (set of model cut planes 206, seen in figure 2) and moreover all points associated to a farther region with respect to a second clipping plane (set of model cut planes 206, seen in figure 2), respectively, thereby making the rendered image being based on an intermediate region between said first clipping plane and said second clipping plane (col. 4 lines 29-49).

Cline does not explicitly disclose that the first clipping plane is moved to form said second clipping plane.

Kimura discloses a three-dimensional image processing apparatus which can three-dimensionally display soft tissue objects without damaging their original information and hence can support simulation in planning an operation (col. 1 lines 6-10, col. 1 lines 39-43). In particular Kimura discloses that parameters for specifying positions of respective sections are input by an ROI (region of interest) input such as a tracker ball (col. 5 lines 20-22). As seen in figure 8B, a cutting portion 84 is designated

by the ROI input (col. 5 lines 31-33). This cutting plane 84 is affine transformed as seen in figure 8C to form the second plane and display the volume of the 3D image (col. 5 lines 31-40, col. 1 lines 53-66). This process allows for accurate simulation in planning an operation.

Cline and Kimura are analogous art because they are from the same field of endeavor of displaying surgical simulations in three-dimensions.

At the time of the invention it would have been obvious to one of ordinary skill in the art to combine Cline and Kimura to form the polyhedron using an affine transformation of a clipping plane. The motivation for doing so is that it would allow for viewing the 3D model in the manner necessary to best get an accurate simulation of the area to be operated on. Thus it would have been obvious to one of ordinary skill in the art to combine Cline and Kimura to obtain the invention as specified in claim 1.

Regarding claim 2, the cutting planes 206 are parallel planes.

Regarding claim 3, as seen in figure 4, the cutting planes are substantially parallel to the imaging plane.

Regarding claim 4, the intermediate region of the cutting planes encompass a region of interest (col. 6 lines 34-35).

Regarding claim 5, Cline discloses user manipulation of the immediate region through rotation of the model (col. 4 lines 39-49).

Regarding claim 6, the cutting planes disclosed by Cline have a diverging angle less than 25 degrees.

Claim 9 is similar to claim 1, except claim 9 is an apparatus claim. As Cline discloses both a method and apparatus the same argument used above for claim 1 applies equally to claim 9.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 7 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cline, European Patent Application 0549182A2 in view of Kimura USPN 4,835,688, and further in view of Stiel et al. *Digital Flasing Tomosynthesis: A Promising Technique for Angiocardigraphic Screening* (as cited in the IDS, hereinafter "Stiel").

Claim 7 is dependent on claim 1 (rejected above over Cline) and includes the further limitation – wherein said first and second limited parts are substantially coinciding but associated to respective stereoscopic lines of view, and said method furthermore providing for viewing a 3-d stereo image of said intermediate region through combined viewing of said first and second limited parts. Cline does not explicitly disclose respective stereoscopic viewing of selected parts of the model.

Stiel discloses a tomosynthesis system for stereoscopic viewing of tomoangiograms of single slices or multiple slices of varying thickness (from the abstract and section F starting on page 318).

Cline, Kimura, and Stiel are analogous art because they are from the same field of endeavor of viewing tomographic images.

At the time of the invention it would have been obvious to one of ordinary skill in the art to combine Cline with Stiel to obtain stereoscopic imaging of selective parts of the tomoangiograms. The motivation for doing this would be to eliminate unnecessary data (as disclosed by Cline col. 2 lines 32-34) and allow clearer stereoscopic viewing of the arteries. Thus it would have been obvious to one of ordinary skill in the art to combine Cline and Stiel to obtain the invention as specified in claim 7.

Claim 10 is similar to claim 7, except claim 10 is an apparatus claim. Thus as Cline discloses both a method and apparatus the same argument used above applies equally to claim 10.

Allowable Subject Matter

Claims 8 and 11 are allowed. The reasons for allowance were given in the previous office action.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

USPN 6,542,153 Method and system for three-dimensional volume editing for medical imaging applications.

USPN 6,480,732 Medical image processing device for producing a composite image of the three-dimensional images.

USPN 6,603,474 Method and apparatus for occlusion culling of objects in a data processing system.

USPGPUB 2001/0013867 Object search method and object search system.

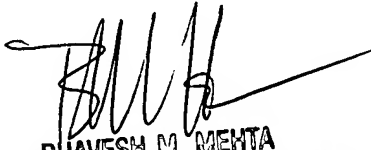
Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John B. Strege whose telephone number is (571) 272-7457. The examiner can normally be reached on Monday-Friday between the hours of 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on (571) 272-7453. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JS


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